FUTURE ELECTRIC
Utility Regulation

WEBINAR ANNOUNCEMENT:

Distribution System Pricing With Distributed Energy Resources

Report No. 4 in the Future Electric Utility Regulation series

Lawrence Berkeley National Lab presents a free, one-hour webinar to discuss the findings of a new report, *Distribution System Pricing With Distributed Energy Resources*.

Rooftop solar systems with smart inverters and grid-integrated appliances are among the growing fleet of distributed energy resources (DERs) that raise questions about the business relationship between electric distribution utilities and utility customers.

Utilities will likely continue to provide backup power and other grid services to customers adopting these devices. At the same time, utilities may buy services from customers with DERs, such as energy, capacity and balancing.

In this kind of two-way future, how should these services be priced?

This fourth report in Berkeley Lab's *Future Electric Utility Regulation* series begins by identifying distribution system services today and changes that are likely in the future. The report then discusses pricing alternatives for recovery of system costs, as well as payment for system services that could be deployed to assure that DERs both pay a fair share of system costs and are eligible to sell cost-effective distribution services to the utility system. The report compares these alternatives from a utility perspective and from a consumer perspective, including the perspective of a DER-owning consumer and a fully grid-dependent consumer.

The report authors, Ryan Hledik of The Brattle Group and Jim Lazar of the Regulatory Assistance Project, will present the report on a free webinar on Tuesday, May 31, at 10 a.m. Pacific (1 p.m. Eastern). **Click here to register**.

The report explores four options for pricing distribution services in the future, including rates tailored for each type of service, rates tailored to each type of customer, a buy/sell arrangement where DER customers pay for their use of the distribution grid and get paid separately for services they provide, and a competitive solicitation for buying grid services from DER customers. Those approaches are then evaluated based on economic efficiency, equity and fairness, customer satisfaction, utility revenue impacts and customer price impacts.

Finally, the report features a point-counterpoint debate from the two authors. Hledik presents considerations from the perspective of the distribution utility, while Lazar presents issues from the perspective of consumers.

The report will be released on or before May 24 at feur.lbl.gov.

The National Electricity Delivery Division of the U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability provides funding for the Future Electric Utility Regulation series. Lisa Schwartz, in Berkeley Lab's Electricity Markets and Policy Group, is the project manager and technical editor.

About the Authors

Ryan Hledik is a principal at The Brattle Group, specializing in the economics of policies and technologies that are focused on the energy consumer. He has worked with more than 50 clients across 30 states and seven countries, including utilities, policymakers, law firms, technology firms, research organizations, and wholesale market operators in matters related to retail rate design, energy efficiency, demand response, distributed generation and smart grid investments. He holds an M.S. in Management Science & Engineering from Stanford and a B.S. in Applied Science from The University of Pennsylvania.

Jim Lazar is a senior advisor at The Regulatory Assistance Project, with 37 years of experience in 29 states and 11 countries. He specializes in utility pricing and resource planning. His recent publications include Electricity Regulation in the U.S., Revenue Regulation and Decoupling, Incorporating Environmental Costs in Electric Rates, Rate Design Where Advanced Metering Infrastructure Has Not Been Fully Deployed, and Smart Rate Design for a Smart Future.

Other reports in the Future Electric Utility Regulation series:

1. Electric Industry Structure and Regulatory Responses in a High Distributed Energy Resources Future (December 2015)
By Steve Corneli of NRG and Steve Kihm of Seventhwave

This report envisions potential structural and business model changes in a future where distributed energy resources are competitive with grid power in price and performance. It describes two competing views. In one, utilities play a major role in sourcing, financing and optimizing distributed energy resources. In the other, competitive firms increasingly perform these functions. In such a future, the utility focuses on providing and maintaining infrastructure to deliver basic energy and capacity services, while facilitating distributed energy resources to create value for the utility and grid, lower the utility's costs, and encourage customers to remain connected to the distribution system rather than defect from it.

2. Distribution Systems in a High Distributed Energy Resources Future: Planning, Market Design, Operation and Oversight (December 2015)
By Paul De Martini of California Institute of Technology and Lorenzo Kristov of California Independent System Operator

The report offers a practical three-stage framework to guide the evolution of distribution systems with growth in distributed energy resources. The authors provide a structured sequence that regulators and policy makers can use to assess options and develop a preferred distribution system tailored to their jurisdiction, with clear lines of sight to overarching regulatory and public policy objectives. The authors then compare three distribution operational models for the future and discuss the pros and cons of an independent Distribution System Operator (DSO) versus the distribution utility serving as the DSO. The report concludes with considerations and recommendations for policy makers, regulators, utilities and other stakeholders.

3. Performance-Based Regulation in a High DER Future (January 2016)

By Tim Woolf of Synapse Energy Economics and Mark Lowry of Pacific Economics Group Research

The report explores key elements and variations of comprehensive performance-based regulation (PBR) and its advantages and disadvantages from the perspectives of utilities and customers. The report explains the components of PBR, including multi-year rate plans and performance incentive mechanisms, and how they can be applied to a potential future with a high reliance on energy efficiency, demand response, distributed generation and storage.

Reports under development:

Recovery of Utility Fixed Costs: Utility, Consumer, Environmental and Economist Perspectives (May 2016)
By Lisa Wood (Institute for Electric Innovation) and Ross Hemphill (RC Hemphill Solutions), John Howat (National Consumer Law Center), Ralph Cavanagh (Natural Resources Defense Council) and Severin Borenstein (University of California-Berkeley), with a literature review by Jeff Deason and Lisa Schwartz (LBNL)

Future of Resource Planning (June 2016)
By Fredrich Kahrl (E3), Andrew Mills (LBNL), Arne Olsen and Nancy Ryan (E3)

Reports and webinar materials are available at feur.lbl.gov/. Additional report topics will be announced.